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International application number: PCT/GB04/005434

International filing date: 23 December 2004 (23.12.2004)

Document type: Certified copy of priority document

Document details: Country/Office: GB
                     Number: 0330179.3
                     Filing date: 30 December 2003 (30.12.2003)

Date of receipt at the International Bureau: 08 February 2005 (08.02.2005)

Remark: Priority document submitted or transmitted to the International Bureau in
           compliance with Rule 17.1(a) or (b)

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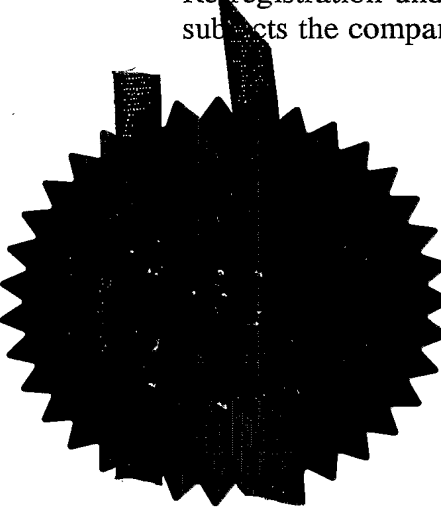Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse

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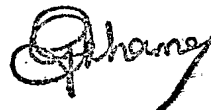
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1.	Your reference	LJH/P47051.GB01

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P01/7700 6-30-0330179.3 HOME

2.	Patent application number *(The Patent Office will fill in this part)*	**0330179.3**

40 DEC 2003

3.	Full name, address and postcode of the or of each applicant *(underline all surnames)*	ECEBS LIMITED 68 DOBCROFT ROAD MILLHOUSES SHEFFIELD SOUTH YORKSHIRE S7 2LS
	Patents ADP number *(if you know it)*	8275357002
	If the applicant is a corporate body, give the country/state of incorporation	ENGLAND, UNITED KINGDOM

4.	Title of the invention	IMPROVED SMARTCARD SYSTEM

5.	Full name, address and postcode in the United Kingdom to which all correspondence relating to this form and translation should be sent	Reddie & Grose 16 Theobalds Road LONDON WC1X 8PL
	Patents ADP number *(if you know it)*	91001

		Country	Priority application *(If you know it)*	Date of filing *(day/month/year)*
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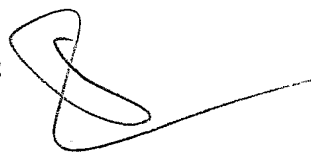Do not count copies of the same document.

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Description

Claim(s)   2

Abstract

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12. Name and daytime telephone number of   L J HARLAND
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IMPROVED SMARTCARD SYSTEM

The invention concerns an improvement to the smartcard system described in International Patent Application No WO03/049056 and, in particular, it concerns the possibility of extending the functionality of the scripts and script engine mechanism and the extension of the Range of operations that can be performed.

At defined in International Patent Application No WO03/049056, the scripts are sequences of ADPU's according to ISO 7816-4, pertaining in the most part to file system manipulation.

The improvement concerns adding other operations over and above the file system commands of Read, Update etc. The additional operations are to include arithmetic operations, such as ADD or SUBTRACT or COMPARE, on either records within files or simpler Data Objects.

We have appreciated that each record could effectively be treated as a register. The machine OP codes are able to perform comparisons and arithmetic operations between registers. The standard READ and UPDATE commands could be used to perform the basic operations of getting data in and out of registers (records). One way of doing this would be having a fixed size register (record) as it makes the comparisons and arithmetic easier, requiring much less dev time.

In addition, the script engine itself will be enhanced to include CONDITIONAL statements (IF ... THEN GO TO APDU X). Here the results of COMPARE command will be used to direct the sequence of ADPU's to be executed next. This in effect gives the script programme flow capabilities enabling the construction of scripts to perform macro-like operations such as are required to have the card make complex decisions after, for example, examining a history of transactions.

The key benefit of adding this programme flow capability up at the script level is all the issues relating to data isolation, low level communication etc are taken care of by the lower layers of the smartcard system. The card's O/S and, so, the business logic of a particular application can be specified and captured with a very high level, with user friendly interfaces, such as flow charts, which can be built and translated "off the card", into the script to run on the card. XML formatting would probably be used as the 'pseudo code' intermediate stage as an enhancement to the XML file system model already in described in International Patent Application No WO03/049056 and so acts as the business logic input to the terminal framework of that system.

In addition, the sequence of commands to be issued by the terminal would, in the improved system, include script selection and execution to make up a complete Business Application such as a payment request on a credit card. Also the Configurator tool described in International Patent Application No WO03/049056 can be extended to include such flow-charting and ladder sequence diagrams as the requirements entry point.

The benefit is to enable the simultaneous development of terminal and card applications by going straight from application high level functional requirements (human generated diagrams) to running code including more complex business logic running on either or both platforms.

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To summarise, the system described in International Patent Application No WO03/049056 does not automate the generation of Business Logic. This enhancement to the script mechanisms of that system enables the automated generation of business logic code running on the card, and can be extended to run on the terminal also. This leaves only the user interface and host communications aspects of terminal design to be developed by traditional methods, which are themselves already highly efficient.

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